

**THIS PAGE IS INSERTED BY OIPE SCANNING
AND IS NOT PART OF THE OFFICIAL RECORD**

Best Available Images

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

BLACK BORDERS

TEXT CUT OFF AT TOP, BOTTOM OR SIDES

FADED TEXT

BLURRY OR ILLEGIBLE TEXT

SKEWED/SLANTED IMAGES

COLORED PHOTOS HAVE BEEN RENDERED INTO BLACK AND WHITE

VERY DARK BLACK AND WHITE PHOTOS

UNDECIPHERABLE GRAY SCALE DOCUMENTS

**IMAGES ARE THE BEST AVAILABLE
COPY. AS RESCANNING *WILL NOT*
CORRECT IMAGES, PLEASE DO NOT
REPORT THE IMAGES TO THE
PROBLEM IMAGE BOX.**

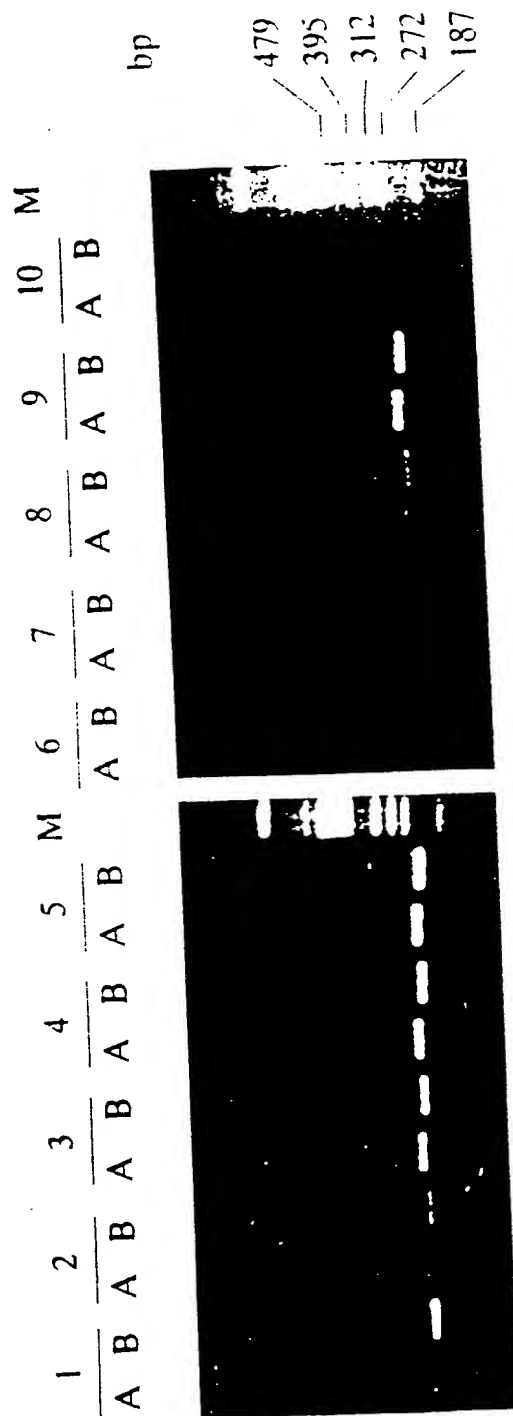


FIG. 1

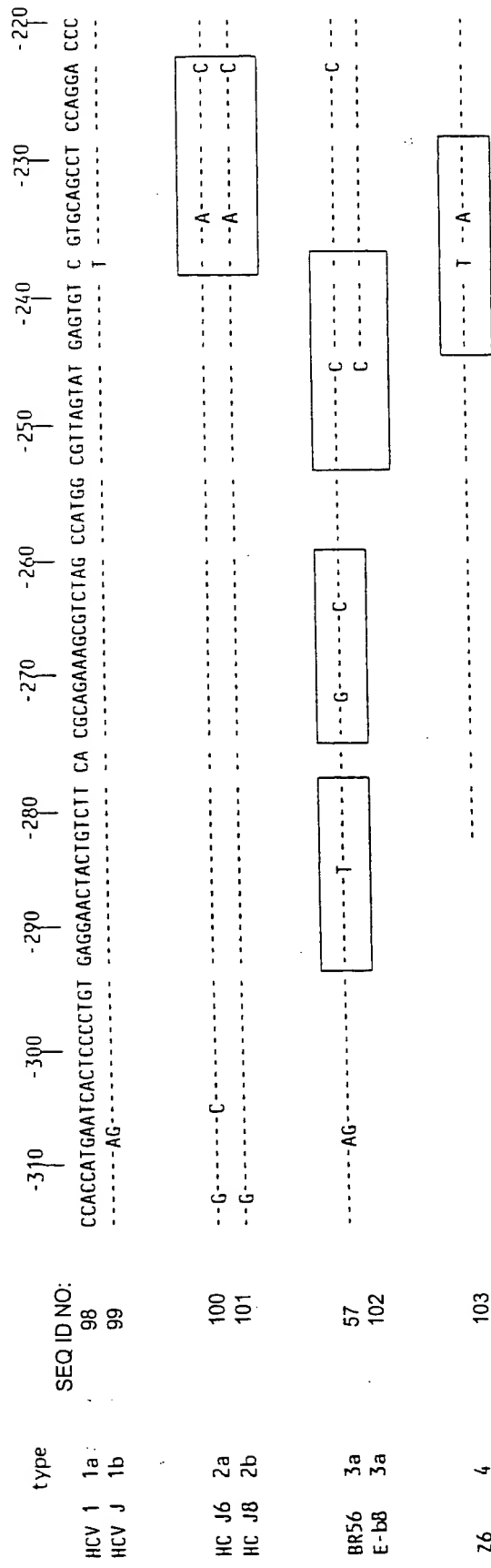


Figure 2A

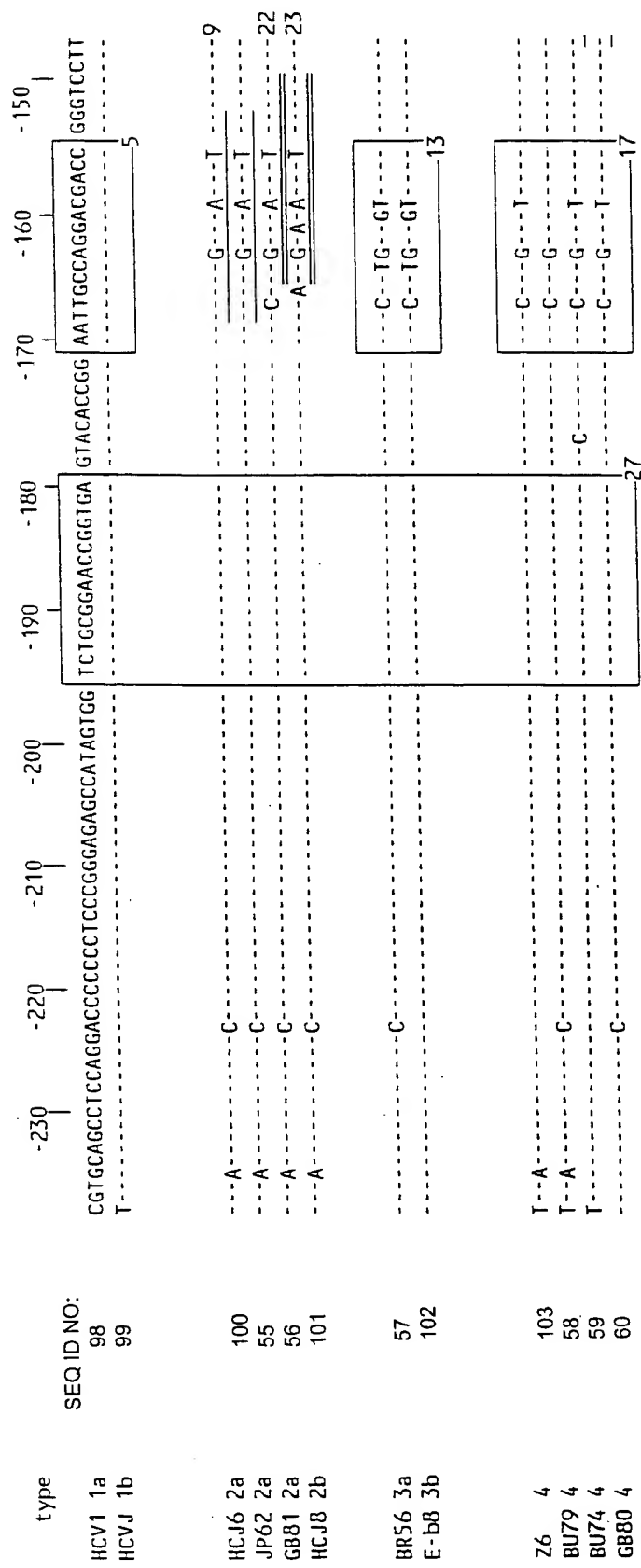
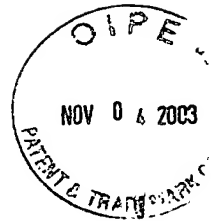


Figure 2 B

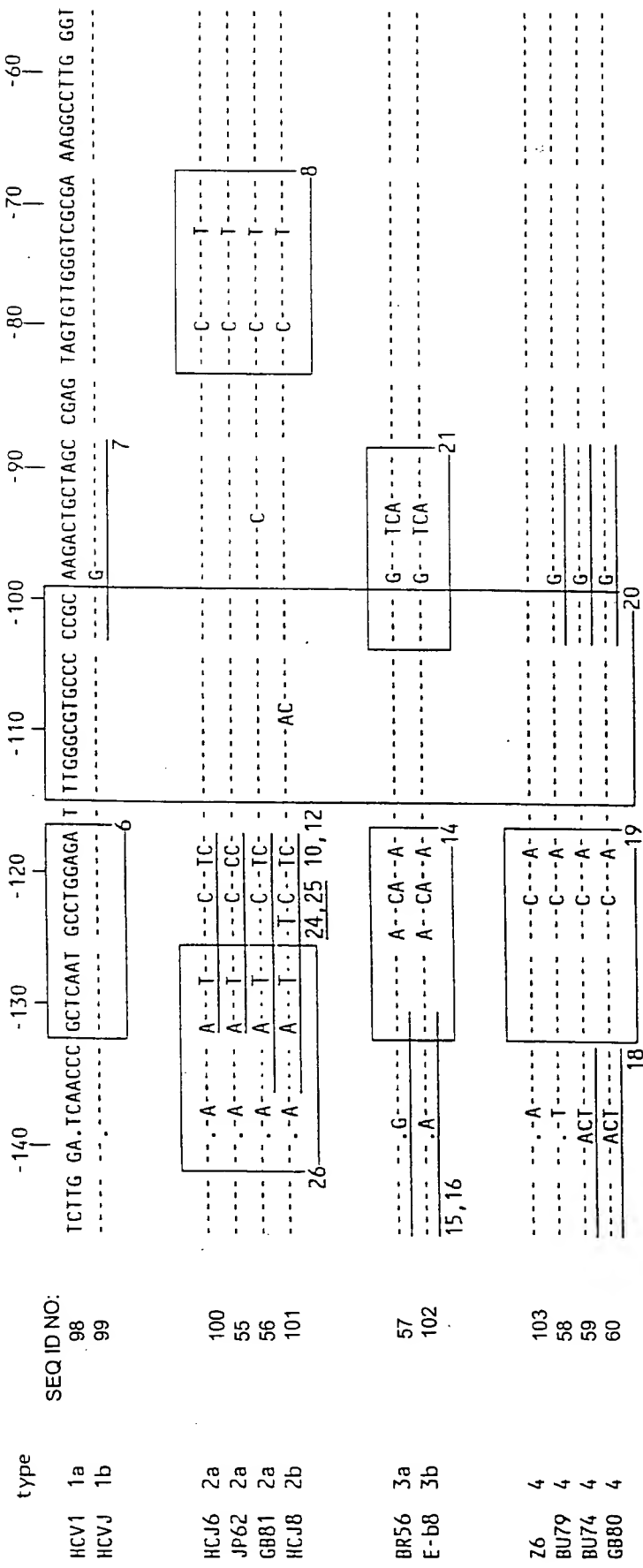


Figure 2C

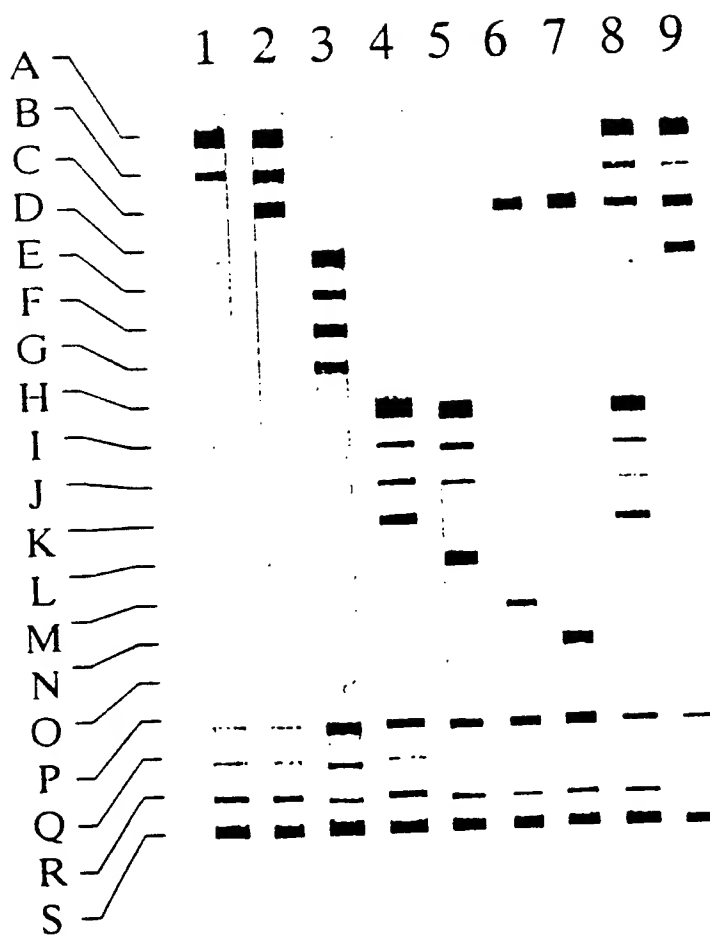
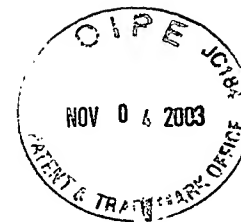


FIG. 3



Iso- late	Type	Accession number							
		-240	-230	-220	-180	-170	-160	-150	-140
HCV-1	1a	GAGTGTGTCAGCCTCCAGGACCC*AGTACACCGGAATTGCCAGACGACCGGTCCTTTC..TTGGATC.AA							
HCV-J	1b	-----T-----							
BE82	1b	-----T-----							
BE90	1b	-----T-----							
HC-J6	2a	-----A-----							
HC-J8	2b	-----A-----							
BE91	2b	-----A-----							
BE92	2c	-----A-----							
BR56	3a	-----C-----							
BE93	3a	-----C-----							
BE94	3a	-----C-----							
HCV-TR	3b	-----C-----							
BE98	3c	-----C-----							

SEQ ID NO:

98

99

61

62

100

101

63

64

57

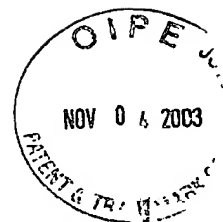
65

66

104

80

FIG. 4A-1



SEQ ID NO:

Iso- late	Type	Accession number ref.									
		-240	-230	-220	-180	-170	-160	-150	-140		
		↓	↓	↓	↓	↓	↓	↓	↓		
GB48	4a	---	T-A	---	*	---	C-G	T	---	A.	
GB116	4a	---	T-A	---	*	---	C-G	T	---	T.	
GB569	4a	---	T-A	---	*	---	C-G	T	---	A.	
GB358	4a	---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---	A.	
		---	T-A	---	*	---	C-G	T	---		

FIG. 4A-2

Iso- late	Type	Accession number ref.									
		-240	-230	-220	-180	-170	-160	-150	-140		
SA1	5a	↓	↓	↓	↓	↓	↓	↓	↓		
BE95	5a	↓	↓	↓	↓	↓	↓	↓	↓		
BE96	5a	↓	↓	↓	↓	↓	↓	↓	↓		
HK1	6a	↓	↓	↓	↓	↓	↓	↓	↓		
HK2	6?	↓	↓	↓	↓	↓	↓	↓	↓		

SEQ ID NO:
 108
 78
 79
 109
 110

FIG. 4A-3

FIG. 4B-1



Isolate	Type	Accession number reference							
		-130	-120	-110	-100	-90	-80	-70	
GB48	4a	↓	↓	↓	↓	↓	↓	↓	67
GB116	4a	↓	↓	↓	↓	↓	↓	↓	68
GB569	4a	↓	↓	↓	↓	↓	↓	↓	69
GB358	4a	↓	↓	↓	↓	↓	↓	↓	70
GB549	4e	↓	↓	↓	↓	↓	↓	↓	71
CNM600	4c	↓	↓	↓	↓	↓	↓	↓	72
CAM736	4c	↓	↓	↓	↓	↓	↓	↓	73
GB809	4c	↓	↓	↓	↓	↓	↓	↓	74
GB487	4h	↓	↓	↓	↓	↓	↓	↓	75
GB724	4g	↓	↓	↓	↓	↓	↓	↓	76
BE97	4g	↓	↓	↓	↓	↓	↓	↓	77
SA1	5a	↓	↓	↓	↓	↓	↓	↓	108
BE96	5a	↓	↓	↓	↓	↓	↓	↓	78
BE95	5a	↓	↓	↓	↓	↓	↓	↓	79
HK1	6a	↓	↓	↓	↓	↓	↓	↓	109
BE98	3c	↓	↓	↓	↓	↓	↓	↓	80
GB438	4f	↓	↓	↓	↓	↓	↓	↓	81

FIG. 4B-2

NOV 0 6 2003
PATENT & TRADEMARK

SEQ ID NO:

HCV-1	STVTESD	IRTEEA	YQCCLD	PQARVA	IKSL	TERLY	VGGPL	NSRG	CGYR	CRAS	GVLT	TSCG	NLT	TCY	IKARA	ACRA	AGL	QDCT	ML	VCGDD	LV	VV	ICE	111
HC-J1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	112
HCV-H	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	113
HCV-J	N	S	A-E	Q-R	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	114
HCV-JK1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	115
HCV-CHINA	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	116
HCV-T	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	117
HC-J4.91	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	118
HCV-TA	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	119
HCV-JT	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	120
HCV-BK	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	121
BE90	N	V-S	A-E	Q	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	82
HC-J6	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	122
HC-J8	R	S	RA-S	PEE	HT	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	123
BE91	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	83
BE92	R	S	A-S	PQE	TV	H	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	84
T1	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	124
T7	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	125
BE93	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	85
T9	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	126
T10	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	127
GB48	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	86
GB116	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	87
GB215	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	88
GB358	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	89
GB549	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	90
GB809	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	91
BE95	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	92
CHR18	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	128

FIG. 5A



	101	SEQ ID NO:
HCV-1	SAGVQEDAASLRA	111
HC-J1	-----	112
HCV-H	-----	113
HCV-J	---T-----A---	114
HCV-JK1	---T-----V	115
HCV-CHINA	---T-----V	116
HCV-T	---T-----V	117
HC-J4.91	---T-----A---	118
HCV-TA	---T-----V	119
HCV-JT	---T-----V	120
HCV-BK	---T-----V	121
BE90	---T-----V	82
HC-J6	-Q-TE--ERN---	122
HC-J8	-Q-NE--ERN---	123
BE91	-Q-NE--ERN---	83
BE92	-Q-TE--ERN---	84
T1	-D--D--R-A---	124
T7	-D--D--RTA---	125
BE93	-D--D--R-A---	85
T9	-C--E--R-A---	126
T10	-C--E--R-A---	127
GB48	-D--E--KRP-G-	86
GB116	-D--E--KRA-G-	87
GB215	-D--E--KRA-GV	88
GB358	-D--E--KRA-G-	89
GB549	-G--E---RA---	90
GB809	-G--E--KRA-G-	91
BE95	-Q-TH--E-----	92
CHR18	-Q-TH--K-----	128

FIG. 5B

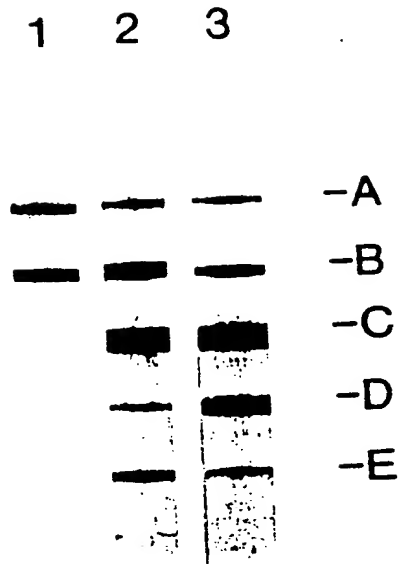


FIG. 6

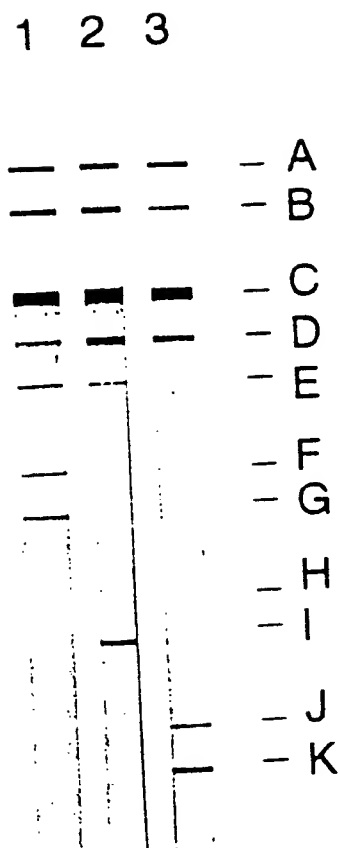
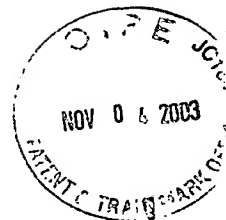


FIG. 7



FIG. 8

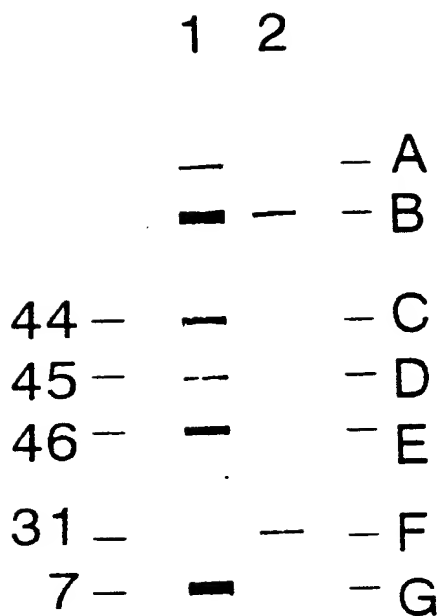


FIG. 9

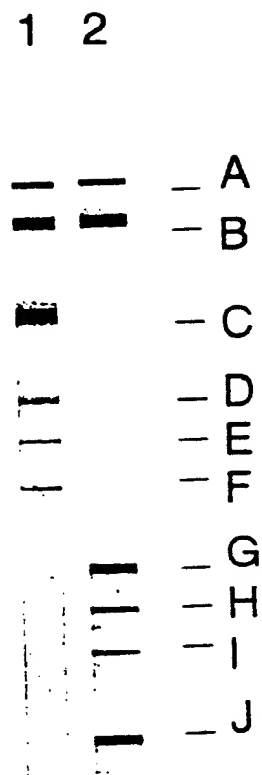


FIG. 10